

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

be considered and entered into the record. Applicants have not raised any new issues that would cause the Examiner to further search.

Issues Under 35 U.S.C. § 102(b)

Claims 1 and 4-9 stand rejected under 35 U.S.C. §102(b) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as being obvious over Kawamatsu '573 (USP 5,421,573). Applicants submit that patentable distinctions exist between the cited prior art and the present invention.

Present Invention

Applicants have directed the present invention to a golf club shaft having a plurality of fiber reinforced resinous layers that are layered one upon another in a winding state. The first inclined fiber reinforced resinous layer and the second inclined fiber reinforced resinous layer are wound by $N + 0.5$ unintegral turns, respectively, so as to apply an anisotropic property to the shaft, wherein N is an integer more than 1.

The golf club shaft of the present invention has the same bending stiffness in circumferential direction, when the shaft is bent in any direction, because the thickness at any position in its circumferential direction is the same.

Distinctions Between Present Invention and Kawamatsu '573

As discussed in the previous Response, Kawamatsu '573 discloses a golf club shaft comprised of a first, a second, a third and a fourth sheet body that is made from reinforced fibers. These fibers are wound one over the other with the first sheet body the inner most winding, the second sheet body the second inner most winding, the third sheet body the third inner most winding and the fourth sheet body the outer most winding. In Figure 4 of Kawamatsu '573, the first and second sheet bodies, 6a and 6b, are wound by two (2) turns. *agree*

Kawamatsu '573 fails to disclose a golf club shaft that the first inclined fiber reinforced resinous layer and the second inclined fiber reinforced resinous layer are wound by $N + 0.5$ unintegral turns, respectively, so as to apply an anisotropic property to the shaft, wherein N is an integer more than 1. Furthermore, Kawamatsu fails to disclose a golf club shaft that has the same construction in the axis direction of the shaft and the same thickness construction in circumferential direction. *agree*

Kawamatsu '573 is silent as to the layers of 6a and 6b being wound by unintegral turns of more than 1 in column 2, lines 39-48. The Examiner alleges on page 4 of the Office Action that fibers are wound $N + 0.5$, but clearly Figure 4 indicates that the fibers 6a and 6b are wound two times. A *agree*

skilled artisan only would understand that 6a and 6b are wound two times as disclosed in Figure 4.

As discussed previously, Kawamatsu '573 discloses that the number of wound prepreg is different along the axis of shaft between the grip and the head. See column 5, line 59 to column 6, line 25. Therefore, the shaft fails to have the same bending stiffness in circumferential direction, which results in the bending stiffness changing according to the swing direction. In contrast, the present invention is limited to where the $N + 0.5$ turns and winding start positions of the first and the second inclined fiber reinforced resinous layer continue along an axis thereof so that same layer constructions continue along the axis of said golf club shaft of which the first and second inclined fiber reinforced resinous layers are wound, and number of layers and thickness are the same in the golf club shaft circumferential direction. A shaft cannot have the anisotropic property in which a predetermined principal elastic direction thereof is different from the principal geometric axis, so the number of layers having inclined fiber reinforced is different in thickness direction and in axis direction.

NOT
CLAIMED

disagree

Applicants assert that Kawamatsu '573 fails to anticipate the present invention. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art

reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Since Kawamatsu '573 fails to disclose an element of the present invention, such as "unintegral N + 0.5 turns", Kawamatsu '573 fails to anticipate the present invention.

Applicants respectfully request the Examiner to withdraw the 35 U.S.C. §102(b) rejection.

Concerning the 35 U.S.C. §103(a) rejection, the Examiner must present a *prima facie* case of obviousness consisting of motivation or suggestion to modify or combine references such that one of ordinary skill in the art has a reasonable expectation of success of making the present golf club shaft. "Obviousness can only be established by combining or modifying the teaching of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art." MPEP 2143.01, citing In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Kawamatsu '573 fails to disclose or suggest a significant element of the present invention as set forth in the claims; thus, a *prima facie* case of obviousness has not been presented.

Therefore, patentable distinctions exist between the present invention and the cited reference. Applicants

respectfully request the Examiner to withdraw the 35 U.S.C. § 103(a) rejection.

Declaration Describing Cited Prior Art

Applicants submit that a *prima facie* case of obviousness has not been presented. However, if the Examiner asserts that a *prima facie* case of obviousness has been established, Applicants assert that the submitted Declaration describing the cited prior art overcomes the *prima facie* case of obviousness. Applicants have attached a 37 C.F.R. §1.132 Declaration by Hideaki Kawamatsu for the Examiner's consideration.

Mr. Kawamatsu is the inventor of the cited prior art U.S. Patent No. 5,421,573. Thus, Mr. Kawamatsu is intimately aware of the invention disclosed in Kawamatsu '573. Mr. Kawamatsu describes the invention of the cited prior art in detail and provides clear distinguishing characteristics between the cited prior art and the present invention.

Applicants would like to emphasize page 9, Tables 3 and 4 of Mr. Kawamatsu's Declaration. Table 3 represents the invention of the cited prior art and Table 4 represents the present invention. With the limitations of the present invention the number of wound plies are consistent for the entire length of the golf club shaft. In contrast, the cited prior art has a varying number of wound plies at different

points along the golf club shaft. Tables 5 and 6 on page 10 of the Declaration also show how the present invention has the same number of wound plies at any point of the shaft. The golf club shaft of the invention of Kawamatsu '573 does not curve or twist, whereas, the golf club shaft of the present invention does twist and curve because of the limitation of the construction of the shaft.

Applicants assert that Mr. Kawamatsu's declaration clearly shows that the cited prior art fails to disclose or suggest the present golf club shaft.

Conclusion

Applicants submit for the reasons stated above that the present claims define patentable subject matter such that this application should be placed into condition for allowance.

If the Examiner has any questions regarding the above matters, please contact Applicants' representative, Mark W. Milstead (Reg. No. 45,825), in the Washington, metropolitan area at the telephone number listed below.

Attached hereto is a marked-up version showing changes made to the application by this amendment.

Pursuant to 37 C.F.R. 1.17 and 1.136(a), the Applicants respectfully petition for a three (3) month extension of time for filing a response in connection with the present

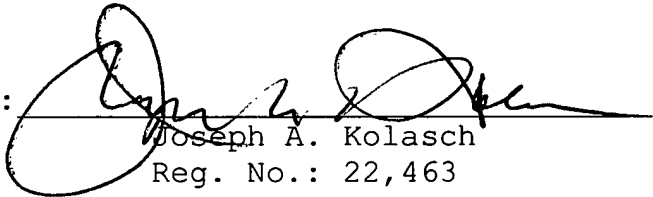
application. The required extension fee of \$890.00 is attached to the Notice of Appeal, which is being filed concurrently herewith.

If necessary, the Commissioner is hereby authorized in this, concurrent, and further replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fee required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By:


Joseph A. Kolasch
Reg. No.: 22,463

P. O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

JAK/MWM

Attachments: Version with Marking to Show Changes Made
37 C.F.R. §1.132 Declaration

Version with Marking to Show Changes MadeIn the Claims

The claims have been amended as follows:

1. (Twice Amended) A golf club shaft having a plurality of fiber reinforced resinous layers which are layered one upon another in a winding state,

wherein one or more layers of said layers are inclined fiber reinforced resinous layers in which reinforcing fibers are oriented at angles not 0° and 90° with respect to an axis of said golf club shaft,

wherein the inclined fiber reinforced resinous layers are

a first inclined fiber reinforced resinous layer in which reinforcing fibers are oriented at an angle of α° with respect to an axis of said golf club shaft, wherein α° has a value of $0^\circ < \alpha < 90^\circ$, and

a second inclined fiber reinforced resinous layer in which reinforcing fibers are oriented at an angle of $-\alpha^\circ$ with respect thereto,

wherein, the second inclined fiber reinforced resinous layer is adjacently layered on the first inclined fiber reinforced resinous layer in a winding state at one portion or more,

a winding start position of the first inclined fiber reinforced resinous layer and a winding start position of the

second inclined fiber reinforced resinous layer are spaced 180° in a circumferential direction of said golf club shaft, and

the first inclined fiber reinforced resinous layer and the second inclined fiber reinforced resinous layer are wound by $N + 0.5$ unintegral turns, respectively, so as to apply an anisotropic property to the shaft, wherein N is an integer more than 1,

wherein the $N + 0.5$ turns and winding start positions of the first and the second inclined fiber reinforced resinous layer continue along an axis thereof so that same layer constructions continue along the axis of said golf club shaft of which the first and second inclined fiber reinforced resinous layers are wounded, and number of layers and thickness are the same in the golf club shaft circumferential direction.

4. (Twice Amended) The golf club shaft according to [clam] claim 1, wherein the first fiber reinforced resinous layer and the second fiber reinforced resinous layer are bonded to form one prepreg sheet.